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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,079	11/27/2001	Koji Taniguchi	70840/56727	6129
21874	7590	01/22/2004	EXAMINER	
EDWARDS & ANGELL, LLP			SEFER, AHMED N	
P.O. BOX 9169			ART UNIT	
BOSTON, MA 02209			PAPER NUMBER	

2826

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/997,079	TANIGUCHI ET AL.	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/27/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-14) is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 9 and 12 which directly or indirectly depend on claim 1 recite the limitation "the other insulating film" which was introduced in claim 2. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1-5, 8, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito (JP 2-19194).

Ito discloses in figs. 1 and 2 a liquid crystal display apparatus, comprising: a pair of substrates 31/32; and a liquid crystal layer 39 having negative dielectric anisotropy sandwiched by the pair of substrates; wherein: electrodes 35 are provided on each of the pair of substrates, each pixel being defined by an electrode on one of the pair of substrate and a corresponding electrode on the other of the pair of substrates; liquid crystal molecules in the liquid crystal layer are oriented in a direction substantially perpendicular to a substrate surface in the absence of an applied voltage, are oriented in a direction substantially parallel to the substrate surface in the presence of an applied predetermined voltage, and are oriented in a slanting direction with respect to the substrate surface in the presence of an applied voltage less than the predetermined voltage; each of the electrodes provided on at least one of the pair of substrates has at least first and second tilted surfaces facing directions different from a direction substantially perpendicular to the substrate surface and being adjacent to each other; and an insulating film 36/37 is provided on a liquid crystal molecule side of the electrodes provided on the at least one of the pair of substrates to bury the tilted surfaces of the electrodes to produce a flat surface of the at least one of the pair of substrates.

As for claim 2, Ito discloses another insulating film 36 comprising predetermined protrusions, pits, or a pit-and-protrusion pattern having at least first and second tilted surfaces (unnumbered) are provided on a liquid crystal layer side of the at least one of the pair of substrates so that the electrodes provided on the at least one of the pair of substrates are provided

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on the other insulating film while the first and second tilted surfaces of the other insulating film are maintained.

As for claims 3 and 8, Ito discloses the first and second tilted surfaces of each of the electrodes provided on the at least one of the pair of substrates are provided for a corresponding pixel, and liquid crystal molecules in the corresponding pixel are tilted in directions different from a direction substantially perpendicular to the substrate surface, the directions being separated by a boundary between the first and second tilted surfaces.

As for claims 4, 5, 9 and 12, Ito discloses an insulating film 36/37 serving as a vertical alignment film provided by subjecting surfaces of the pair of substrates to vertical alignment treatment.

As for claim 11, Ito discloses the first and second tilted surfaces of each of the electrodes provided on the at least one of the pair of substrates are adjacent to each other to form a protrusion, an apex portion of the protrusion facing the liquid crystal layer, and a boundary between the first and second tilted surfaces are exposed from the insulating film to the liquid crystal layer.

7. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeda et al. US PG-Pub 2001/0020992.

Takeda et al disclose (see fig. 25 and par. 0129) a liquid crystal display apparatus, comprising: a pair of substrates 20/22; and a liquid crystal layer 6 having negative dielectric anisotropy sandwiched by the pair of substrates; wherein: electrodes 16/18 are provided on each of the pair of substrates, each pixel being defined by an electrode on one of the pair of substrate and a corresponding electrode on the other of the pair of substrates; liquid crystal molecules in

the liquid crystal layer are oriented in a direction substantially perpendicular to a substrate surface in the absence of an applied voltage, are oriented in a direction substantially parallel to the substrate surface in the presence of an applied predetermined voltage, and are oriented in a slanting direction with respect to the substrate surface in the presence of an applied voltage less than the predetermined voltage; each of the electrodes provided on at least one of the pair of substrates has at least first and second tilted surfaces 50 facing directions different from a direction substantially perpendicular to the substrate surface and being adjacent to each other; and an insulating film 54 is provided on a liquid crystal molecule side of the electrodes provided on the at least one of the pair of substrates to bury the tilted surfaces of the electrodes to produce a flat surface of the at least one of the pair of substrates.

As for claim 2, Takeda et al disclose another insulating film 56 comprising predetermined protrusions, pits, or a pit-and-protrusion pattern having at least first and second tilted surfaces 52 are provided on a liquid crystal layer side of the at least one of the pair of substrates so that the electrodes provided on the at least one of the pair of substrates are provided on the other insulating film while the first and second tilted surfaces of the other insulating film are maintained.

As for claims 3 and 8, Takeda et al disclose the first and second tilted surfaces of each of the electrodes provided on the at least one of the pair of substrates are provided for a corresponding pixel, and liquid crystal molecules in the corresponding pixel are tilted in directions different from a direction substantially perpendicular to the substrate surface, the directions being separated by a boundary between the first and second tilted surfaces.

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As for claims 4, 5, 9 and 12, Takeda et al disclose in fig. 29 an insulating film serving as a vertical alignment film provided by subjecting surfaces of the pair of substrates to vertical alignment treatment.

As for claims 6, 7, 10, 13 and 14, Takeda et al disclose in figs. 21 and 27 each of the electrodes provided on the at least one of the pair of substrates further has at least third and fourth tilted surfaces adjacent to each other and facing directions different from the directions of the first and second tilted surfaces and the direction substantially perpendicular to the substrate surface; and a boundary between the first and second tilted surfaces and a boundary between the third and fourth tilted surfaces are oriented to directions different from each other in a plane parallel to the substrate surface.

As for claim 11, Takeda et al disclose the first and second tilted surfaces of each of the electrodes provided on the at least one of the pair of substrates are adjacent to each other to form a protrusion, an apex portion of the protrusion facing the liquid crystal layer, and a boundary between the first and second tilted surfaces are exposed from the insulating film to the liquid crystal layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Safer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601.

~~EXAMINER~~
~~TECHNOLOGY CENTER 2000~~

ANS

January 08, 2003